

CLAIMS

1. A device operating as a finite state machine and provided for processing events and actions relating to at least one object to be travelled between an initial and a final state, said device comprising a  
5 processing member connected to a memory, characterised in that said initial and final state are integrated into at least one event-state-action diagram defining said finite state machine, said memory having an input connected to a state engine editor and being provided for storing said diagram(s), said state engine editor having an input for receiving object  
10 data, identifying said object and said initial and final state, said object data comprising a first set of states, a second set of events and a third set of actions, said third set comprising a first sub-set of processing actions, a second sub-set of timed actions provided to initiate each time at least one predetermined action of said first sub-set after a predetermined time period  
15 has lapsed and a third sub-set of transition actions, said state engine editor being provided for forming said diagram by matrix-wise structuring said states of said first set and said events of said second set in order to create, at positions within said matrix, a state-event combination, said state engine editor being further provided for attributing to at least one state-event  
20 combination at least one of said actions of said third set, said processing member having an input for receiving event-messages and being provided for converting a received event-message into one of said events of said second set, said processing member being also provided for monitoring said states in order to recognise an actual state for said object and for  
25 selecting within said state diagram, upon receipt of one of said event-messages, a position within said diagram corresponding to said actual state and said event obtained by said converting, said processing member being further provided for retrieving said actions located at said selected position and for supplying said retrieved actions to an action dispatcher in

order to execute said retrieved action, said action dispatcher comprising for each action of said third set an execution routine provided for controlling said execution of said action.

2. A device as claimed in claim 1, characterised in that said  
5 state engine editor is provided for attributing to each state-event combination, comprising said initial state, an action selected among said third sub-set.

3. A device as claimed in claim 1 or 2, characterised in that  
10 said state engine editor is provided for attributing to each state-event combination, comprising said final state, only actions belonging to said first or second sub-set.

4. A device as claimed in anyone of the claims 1 to 3,  
characterised in that said actions belonging to said third set are predetermined.

15 5. A device as claimed in anyone of the claims 1 to 4,  
characterised in that said events belonging to said second set are predetermined.

6. A device as claimed in anyone of the claims 1 to 5,  
characterised in that each diagram is identified by a description thereof and  
20 a reference to the object to which it belongs.

7. A device as claimed in anyone of the claims 1 to 6,  
characterised in that each state is identified by a description thereof and a  
reference to the diagram to which it belongs.

8. A device as claimed in anyone of the claims 1 to 7,  
25 characterised in that each event is identified by a description thereof and a  
reference to the object to which it belongs.

9. A device as claimed in anyone of the claims 1 to 8,  
characterised in that each action is identified by a description thereof.

10. A device as claimed in anyone of the claims 1 to 9, characterised in that said state engine editor is provided for forming said diagrams with an XML description.

5 11. A device as claimed in anyone of the claims 1 to 10, characterised in that each transition action of said third sub-set comprises a reference to an event of said second set, a source and a target state as well as a reference to said diagram to which it belongs.

12. A device as claimed in anyone of the claims 1 to 11, characterised in that said first sub-set comprises a first class of generic  
10 actions and a second class of specific actions identified by a reference to the object to which it belongs.

13. A method for processing, within a finite state machine, events and actions relating to at least one object to be travelled between an initial and a final state operating, characterised in that said method  
15 comprises :

- receiving object data identifying said object and said initial and final state, said object data comprising a first set of states, a second set of events and a third set of actions, said third set comprising a first sub-set of processing actions, a second sub-  
20 set of timed actions provided to initiate each time at least one predetermined action of said first sub-set after a predetermined time period has lapsed and a third sub-set of transition actions;

- forming at least one event-state-action diagram defined in a final state machine pattern of said finite state machine  
25 by matrix-wise structuring said states of said first set and said events of said second set in order to create at positions within said matrix each time a state-event combination;

- integrating said initial and final state into said diagram;

- attributing to at least one state-event combination at least one of said actions of said third set;
- receiving event-messages relating to said object(s) and converting a received event-message into one of said events of said second set;
- recognising said object into said received event-message;
- monitoring said states in order to recognise an actual state for said recognised object and selecting within said state diagram upon receipt of one of said event-messages a position within said diagram corresponding to said actual state and said event obtained by said converting;
- retrieving said actions located at said selected position and executing said retrieved action by processing an execution routine provided for controlling said execution of said retrieved action.

14. A method as claimed in claim 13, characterised in that said objects are classified by object types, each object being identified by a definition and a description of the object type to which it belongs, and wherein a plurality of event-state-action diagrams are formed for each object, each diagram corresponding to one of said object types, said monitoring further comprising a selection of at least one of said diagrams based on said object type.

15. A method as claimed in claim 14, characterised in that said object types are predetermined.

16. A method as claimed in anyone of the claims 13 to 15, characterised in that for each of a plurality of objects at least one dedicated event-state-action diagram is formed, said event-messages comprising an object identifier, said monitoring further comprising a selection of at least

one of said diagrams based on said identified object.